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## Lexicon Core and Its Functioning

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### Abstract

The critical issues related to functions of words in verbal and mental processes are linked to the problems of the lexicon structure and functionality. A closer look needs to be taken at the theories of organization and functioning of the lexicon as a mental and lexical component of the communication activity. Words representation in lexicon as well as investigations of word semantics focusing on forms of words formation and their functions in memory lead to the theory of lexicon organization.

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### 1. Introduction

In linguistics the opposition of two opinions concerning word functioning in a lexicon is observed. According to the first concept language is presented as "self-sufficient" and "self-adjusted" system which is a mirror reflection of speech. To construct a certain speech context a speaker "inspects" by an internal look the whole language system and makes a necessary choice. Listener, in return, receives this information ready for use and only rechecks it for conformity to the conditions of a speech situation. The essence of this concept reduces to the fact, that a word is represented in long-term memory in the whole system of its meanings (usual, contextual and potential) and their possible combinations ready to be demanded at a speech level.

So when understanding contextual meanings and decoding senses, expressed by a word a speaker "applies" its semantic core to various situations. In his turn a listener uses essentially the same algorithm of a meaning derivation on the basis of the semantic core. During repeated actualizations of different meanings of this or that polysemantic word the abstract components are singled out which form the semantic core.

We believe, that functioning of this interpretational mechanism, instead of a mechanic one (scanning all the

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meanings before finding a correct one) reveals creative character of thinking and speaking activities. This approach explains the possibility of storage of extensive volume of the operative information. It can serve as a basis of functioning of a polysemantic word in a lexicon of a person, providing its semantic integrity.

### *1.1 Lexicon structure*

Initially the term “lexicon” was used to characterize a list of morphemes of a specific language different from a word list. As the ideas of transformational generative grammar developed, some researchers started to treat the lexicon as a component of the generative language model playing an auxiliary role in respect of grammar. The word was defined as a meaningful unit that can be identified in a syntactic chain, and the lexicon was seen as a list of indivisible finite elements regulated by morpholexical rules.

Later lexis was included into the so-called «basic component» of a language along with the transformational rules which operate the original dictionary units. It was believed that inclusion of words occurred in the last phase, when the issue of sentence phrasal markers was already resolved; and the rules of transcription of these symbols lead to their substitution with specific lexemes (according to the categorical meanings of the latter). To make this step, the speaker must recall units reflecting his/her concepts from his/her memory. Thus, one started to treat the lexical component as lexicon, and no special differences were made between the dictionary and its reflection in the consciousness.

Later research stressed that words are means of experience organization, while the set of attributes associated with the word represents its major part. The studies of this kind laid a foundation for establishment of the cognitive approach to be used for analysis of the “brain lexicon”. The commitment inspired by C. Osgood to find the internal (categorical) structure of the lexicon and to identify the peculiarities of its development in children had a significant impact on the lexicon concepts. Experimental research results were published with a focus on word’s connotative meaning and on the united verbal and cognitive structure. It was mentioned that the lexicon represents one of the most important mechanisms of cognitive processing of information linked to the level of representation and responsible for recoding in two directions: from perceived units – percepts (perceptive and language signs) to meanings and from intentions to the activity program (language or other). The lexicon is rather a process, than «storage». The lexicon contains a very large set of links between signs and codes of semantic attributes (Osgood, 1980).

Since mid-1960s many representatives of generative grammar started analyzing the problem of word synthesis, its assembly from semantic attributes. This meant that a word is not reproduced, but constructed from components. When a concept of a sentence is born, firstly, its semantic representation is generated, then, if a certain configuration of semantic elements coincides with the semantic representation of lexical units, then this configuration is replaced with a phonological form. During that period the mental lexicon (*lingua mentalis*) was postulated, i.e., nonverbal units of the conceptual system – images, schemes of actions, gestalts, pictures, on one hand, and the language lexicon where concepts and notions have verbal form, on the other hand. The hypothesis that words are synthesized in the lexicon and not simply stored arose from a suggestion that the thought is created in the word, and was not given beforehand. Moreover, the concept groupings are so much linked with the sign language that they do not involve synthesis and exist as gestalts.

Researchers of the Soviet period in Russia lexicon merit to be called cognitive scientists. They believed that there existed the world and its projection in the human brain, and that reflection of the world refracted as a united conceptual system with its images, concepts and notions had a powerful verbalized part (proper lexicon). While the language itself in no way reflected the world, it gave a concept of the latter by verbalizing (symbolizing) individual concepts of the world obtained through active world cognition.

Thus, the lexicon concepts which gained a language form and meaning are used for two functions – representation of the contents of an individual quant of information about the world and for its storage, accumulation and further use. Words help to easily and naturally combine two types of knowledge, two levels of consciousness: verbal and nonverbal. They act as means required, firstly, to detect the object in question from the totality of objects, and, secondly, to identify it verbally in the subsequent speech. A word represents a body of the sign for a concept or a group of concepts, as a carrier of a certain quant of information attributed to its shell in the act of nomination of a respective object. Simultaneously, it acts as an operator which brings to life a chain of complex associations, whatever long, when the consciousness is activated. The operational role of the word also involves “matching” of

the speaker's knowledge with that of his/her partner; in normal speech a word (especially in the identifying position) is used with an aim of transferring segregated knowledge.

Vital is to mention that some researchers consider the lexicon not as a passive storage of data about the language, but as a dynamic functional system which organizes itself due to continuous interaction between processing and structuring of the verbal experience and its products. The new in the verbal experience which goes beyond the system leads to its restructuring; each subsequent system status serves as the basis for comparison in further processing of the verbal experience.

## 1.2 *Lexicon functioning*

It is worth while noting that words are not «so interchangeable» because absolute synonyms do not exist. One needs to clarify the thesis about lexical units being remembered in contexts: a person keeps the most frequent context actualizations in his/her memory, but «assembly» from the main dictionary is based on functions of the speech mechanisms (derivational, combinational etc.) which apparently have intrinsic nature. For instance, in an individual's consciousness words are subject to unconscious processes of synthesis, analysis, comparison, i.e. conceptualization and categorization, interacting with the products of processing of what was perceived before. So, the meanings are decomposed into attributes and attribute characteristics (differentiation processes).

Besides, there is deviation from differing attributes (integration processes) which leads to higher extent of generalization. This allows creation of two types of units: differential attributes and *generalizing components* which differ in the integrity level. The results of these processes may exit via «the consciousness window». They may resist verbalization, since they remain «behind the scenes», thus providing for actualization of some recoding products available to enter the consciousness. As a result, a word is included into the broadest network of multilateral links and relationships. These relationships must include bringing the results to a common code and its further use as an abstract thinking tool. Visual impressions associated with the word may be integrated into complex mental images which act as higher rank units and ensure synchronous storage of a vast information volume.

Lexical meanings just codify stable sets of abstract semantic properties. This means detachment from the context which is connected with the experience of the majority of language use aspects in the social life. Lexicon researchers also believe that it is structured not as a list, since it would be quite primitive. Instead, it has a complex structure with many outputs. Some linguists propose interesting opinions about the lexicon core. When expressions are formed, the chosen concepts are brought to those signs for which the lexicon has units with a required list of semantic components. Thus, the lexicon core and the periphery are formed. The lexicon core signifies words in the «nearest» meanings reflecting everyday notions: The core comprises units of specific meaning which easily evoke mental images. They are central for a group of other words belonging to this category which are more abstract in their meanings. Core words ensure transition from «sensual concretes» to «abstracts». So the lexicon of an individual language is deemed by many authors as the final code.

In fact, in a human memory all similar objects are merged into average results. These average products are signs which substitute multiple homogeneous objects. Thus, a person thinks about an oak, a birch, a fir-tree as generalized images, although during the lifetime he/she saw these objects a thousand times in various forms.

It is interesting to mention that a plain analysis of how we recall a forgotten word prompts us that there are many different «paths» to get the forgotten word. Obviously, words are arranged in alphabetical order; there exist synonymic and antonymic word rows. Apparently, words are linked into lexico-semantic or thematic fields and belong to stylistic and terminological groups. Undoubtedly, along with such paradigmatic organization, there are also grammar and syntactic differentiations, as well as integration, for instance, by parts of speech, functions in expressions etc.

The lexicon core should obviously consist of the most frequent vocabulary. Therefore, one can assume that consciousness contains a «counter» which continuously counts the number of usages (certainly, conventional) and produced an index of word usage or citing frequency of a phrase or an expression. Frequent words and structures «accumulate» extensive links, so access to them is easier; they are always «on the tongue». «Assembly» from the main dictionary during formation of expressions can occur on the basis of mechanisms (derivational, combinational etc.) which exist in the lexicon.

## 1.3 *Lexicon core and its functioning*

The above theories of mental lexicon description focus on various features of its structure and functioning. In some concepts these features are linked with speech production processes. Other concepts relate to speech understanding. One can admit that among all structures of knowledge representation in linguistics the most popular were the frames theories and the memory network models. There are also interesting theories which explain easy access to highly frequent words forming the lexicon core. Obviously, such theories are to be studied yet.

It is our opinion, that in the lexicon each unit is associated with an abstract *complex meaning*. This complex meaning represents a stem common for all variants of a polysemantic word and consists of semantic primes. In many cases complex meanings do not reflect natural concepts. They rather mean open conceptual schemes which gain a meaning depending on the context, and this occurs as a result of operations at the conceptual level.

The meanings of a polysemantic word represent notional domains, unique semantic fields whose components are linked by a common conceptual core. The meaning of any lexical unit is presented at the semantic level as the core. The core meanings represent the semantic composition of the lexeme, and lexicalized concepts determine an adequate context choice.

In our opinion, «presence» of all lexico-semantic variants of a word in the consciousness does not guarantee that at first request one can reproduce a full list of all these meanings. Very often some meanings are omitted in reproduction. Native Russian speakers would hardly recall all meanings of any polysemantic word at once. Therefore, uncertainty about the choice of required meanings coincides with psycholinguists' observations about the fact that consciousness does not store words. This provision can be used as an argument against listed representation of word meanings in the mental lexicon. Some word functioning models in the lexicon describe meanings as self-sufficient independent essences. Conversely, we believe that it is strictly necessary to keep a polysemantic word in a generalized form (as a semantic core), because due to communicative time pressure such substantive core is able to cover more real and potential «precise» individual notions, if required, saving time and cognitive efforts.

Obviously, at the language system level in the long-term memory polysemantic words have a single direct link between the shape image and one generalized (invariant) meaning. It is updated at the speech level as one of individual variants. In other words, both levels (language and speech) demonstrate the principle «one shape – one meaning».

#### 1.4 Lexical invariant of a polysemous word

To derive the *systematic* meaning of the polysemantic word covering all other possible meanings, it is important to take into account the role of the first nominative underived meaning, since the native speakers usually use the first meanings when it comes to the relevant speech forms. The next stage of generalization is an extension of the first meaning with the help of comparison component (Pesina, Solonchak, 2014).

The LE of the word *coat* (1) is defined in the following way: **a warm outer garment with long sleeves buttoned in the front covering at least the upper part of the body, or something like a coat (an outer closely adhering protective covering)** (in comparison with such transferred meanings as *lead coat of an atomic reactor, rubber or plastic coating of an offset printer, barrier coat of a pipe*, etc.) The most «vague» meaning is peculiar to *coat* (6) – *a layer of the substance covering another*. This derived meaning is a kind of gestalt and proposes a wide range of referents. The base of this meaning is assimilation of layer of some material – coat, which is also a cover «closely adhering» to the body surface. This meaning implies abstracting from both the composition of coating matter and the nature of coated surface.

For the polysemous word *cloak* LE will be the following: **a loose outer garment which fastens at the neck and covers most of the body or something like a cloak (something that protects or conceals by covering)**. The abstract part of LE is embedded in all meanings of this word, such as *cloak of secrecy/ hypocrisy/ prejudice*, etc.

This lexical formula of a word is formed as a result of the numerous manifestations of contextual meanings. It is formulated as a result of abstracting from everything that is psychic and those predicates of the objective world, the presence of which is personally conditioned. It's possible to suppose that invariant meanings of polysemous words are systemically important units which demonstrate the non-reflectivity of the language system level in relation to the speech level. It should be noted that phenomenology has always taken interest in such language system universal units revealing. Such abstraction as lexical invariant is realized in numerous speech actualizations of main and transferred meanings. On the other hand, a polysemous word is also formed around similar semantic and at the same time conceptual core from which, probably, random meanings are formed with minimal cognitive efforts. Studies

show the more meanings a polysemous word has, the semantically «poorer» its lexical invariant is.

## 2. Conclusion

The core meanings will vary in the degree of abstractness, being essentially determined by the degree to which they allow polysemy; the more polysemous, the more abstract the representation, while the less polysemous, the less abstract the representation.

Denial of the meaning representation in the polysemous word structure implying that the word is present in the consciousness in the whole meaning system was the ground to look at a hypothesis of existing of the meaningful core of the polysemous word, i.e. the lexical invariant. We proceed from the assumption that, no matter how many meanings are associated with a particular form, it is always the system meaning that is connected with it. It is identified as the meaning of this form at linguistic level, and it is the basis for making the actual meaning of the word at the speech level given the speech context on “one meaning – one form” principle. Lexical invariants have identifiable attributes (with differential among them) and being a sort of stereotypes within the frames of ordinary consciousness, are created by the members of a language community as a result of uniform division of reality.

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